Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KEITH W. HOVIS, HAROLD R. HUNT and ROBERT B. ELDRIDGE

Appeal No. 1998-1579
Application No. 08/388,532

ON BRIEF

Before OWENS, WALTZ and LIEBERMAN, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the examiner's final rejection of claims 1-3, 6-9, 11 and 12, which are all of the claims remaining in the application.

THE INVENTION

Appellants claim a process for separating sulfone from a paraffin hydrocarbon alkylation product by extracting the sulfone from the alkylation product using water. Claim 1 is illustrative:

1. A process for separating sulfone from a paraffin hydrocarbon alkylation product, including hydrocarbons having from 3 to 12 carbon atoms, containing a concentration of a sulfone, said process comprises:

extracting said sulfone from said paraffin hydrocarbon alkylation product by contacting said paraffin hydrocarbon alkylation product with water thereby to extract at least a portion of said sulfone from said paraffin hydrocarbon alkylation product and to provide an extract stream enriched with said sulfone and comprising water and a raffinate stream having a reduced concentration of said sulfone below said concentration of said sulfone in said paraffin hydrocarbon alkylation product.

THE REFERENCE

Eastman et al. (Eastman) 5,237,122 Aug. 17, 1993

THE REJECTION

Claims 1-3, 6-9, 11 and 12 stand rejected under 35 U.S.C. § 103 as being unpatentable over Eastman.

OPINION

We reverse the aforementioned rejection.

Eastman defines acid soluble oils (ASO) as “conjunct polymers which are highly olefinic oils produced by acid-catalyzed reactions of hydrocarbons” (col. 2, lines 54-58). The ASO are soluble in Eastman’s hydrogen halide/sulfone alkylation catalyst and must be removed therefrom to prevent

the ASO from adversely affecting the catalyst activity and the quality of the alkylation product (col. 1, lines 33-55). Eastman discloses a method wherein an alkylation product is separated from a sulfone catalyst component/ASO mixture and then the sulfone and ASO are separated by extraction using water such that an ASO phase and a sulfone/water phase are formed (col. 2, lines 29-36; col. 9, lines 35-60).

The examiner argues that Eastman discloses "the contacting of a hydrocarbon mixture with sulfolane [a sulfone], water phase, and a sulfolane containing hydrogen fluoride catalyst in column 12, lines 60-66" (answer, page 3). This portion of Eastman, however, discloses obtaining a sulfolane/water mixture by concentrating the sulfolane in the sulfolane/water phase from an ASO/sulfolane separation, and using it as part of the alkylation catalyst. This portion of the reference does not indicate that the water extracts sulfolane from the alkylation product.

The examiner argues that because ASO and paraffin hydrocarbon alkylation products both are hydrocarbons, one of ordinary skill in the art would have expected that since water is effective for separating ASO from sulfones, it also would

be effective for separating sulfones from paraffin hydrocarbon alkylation products (answer, pages 6-7). This argument is not well taken because, first, the examiner has not provided evidence that the extraction method which was known in the art to be effective for separating ASO from sulfones would have been reasonably expected by one of ordinary skill in the art to be effective for separating sulfones from hydrocarbons in general or paraffin hydrocarbon alkylation products in particular. Second, in order for a *prima facie* case of obviousness to be established, the applied prior art must be such that it would have provided one of ordinary skill in the art with both a motivation to carry out appellants' claimed process and a reasonable expectation of success in doing so. *See In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991)*; In re O'Farrell*, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). The examiner's argument is directed toward only the reasonable expectation of success aspect of this burden. The examiner has not explained why the applied prior art would have motivated one of ordinary skill in the art to carry out appellants' claimed process. The record

indicates that the examiner has relied upon appellants' disclosure of their invention in the specification rather than the applied references for that motivation.

For the above reasons, we conclude that the examiner has not established a *prima facie* case of obviousness of appellants' claimed invention.

DECISION

The rejection of claims 1-3, 6-9, 11 and 12 under 35 U.S.C. § 103 over Eastman is reversed.

REVERSED

TERRY J. OWENS Administrative Patent Judge	)
THOMAS A. WALTZ Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
PAUL LIEBERMAN Administrative Patent Judge	)

jg

Appeal No. 1998-1579
Application No. 08/388,532

RICHMOND PHILLIPS HITCHCOCK AND FISH
P.O. BOX 2443
BARTLESVILLE, OK 74005